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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,647	07/21/2003	Moon-Cheol Kim	1349.1255	4569

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EXAMINER	
SAJOUS, WESNER	
ART UNIT	**PAPER NUMBER**
2628	

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/622,647	KIM ET AL.	
	Examiner	Art Unit	
	Sajous Wesner	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,10,19-28,30,32-42,44 and 46* is/are rejected.

7)☒ Claim(s) *2-9,11-18,29,31,43 and 45* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This communication is responsive to the amendment and response dated June 28, 2006. Claims 1-46 are presented for examination.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 10, 19-28, and 33-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 6262817).

Considering **claim 1**, the Examiner interprets Sato to disclose an apparatus (see fig. 9) for color compensation of an input signal comprising a chroma deflection generation unit to [calculate a chroma deflection] based on an input chroma signal detected from the input signal (e.g., the original image) and a predetermined first reference value (wherein the chroma deflection generation unit is characterized by the function of item S26 of fig. 9); a hue deflection generation unit to [calculate a hue deflection] based on an input hue signal detected from the input signal and a predetermined second reference value wherein the hue deflection generation unit is characterized by the function of item S27 of fig. 9); a luminance deflection generation unit to [calculate a luminance deflection] based on an input luminance signal detected from the input signal and a predetermined third value (wherein the luminance deflection

generation unit is characterized by the function of item S25 of fig. 9); and a skin tone mapping function generation unit (e.g., items S28 and S29) to output a compensated chroma signal, a compensated hue signal and a compensated luminance signal after individually compensating the input chroma, hue, and luminance signals based on the chroma deflection, the hue deflection and the luminance deflection (e.g., produce a set up matrix by adding the adjustment direction of the luminance, chroma and the hue directed by the image display unit for the original matrix. See col. 10, lines 18-37). See further col. 8, line 37 to col. 16, line 40, wherein the each of first, second and third reference value corresponds to the distribution level value associated with each of the chroma, luminance and hue of the original signal, respectively.

Sato fails to specifically teach that a chroma deflection, a hue deflection, and a luminance deflection are calculated.

However, it is noted that since in Sato the color image is adjusted or deflected based on the calculation of the produced matrix (see col. 16, lines 20-40), it is imperative and obvious that each of a chroma, hue and luminance of the color be also calculated, for the matrix setup is based entirely on the hue, chroma, and luminance parameters for the color. In addition, Sato at col. 10, lines 23-35, clearly suggests that parameters determination for each of a hue, chroma, and luminance for the color are requirements by adjustment units 2 for producing a setup matrix by adding adjustment direction of the luminance, chroma, the hue, directed by the image display unit, for the original matrix.

Thus, given the above disclosure, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to consider modifying Sato to include the calculation of a chroma deflection, a hue deflection, and a luminance deflection; so that an adjusted pixel can be produced by calculating the original pixel and the set up matrix. See col. 10, lines 35-37.

Claim 10 contains limitations that are analogous to and performs the same function as claim 1. As the limitations of claim 1 have been found obvious by Sato, it is readily apparent that the applied prior art performs the underlying limitations. As such, the limitations recited in claim 10 are rejected under the same rationale as claim 1.

Regarding **claims 19 through 22**, the Examiner interprets Sato to disclose an apparatus (as defined by figs. 1 and 9) for color compensating an input image having image properties (wherein the image properties correspond to the luminance, chroma and hue associated with the input or original signal, see fig. 9), comprising: a first deflection calculation unit (as characterized by the function of item S25 of fig. 9) to detect a first amount of deflection of a first one of the image properties (e.g., luminance) from a first reference value; a second deflection calculation unit (as characterized by the function of item S26 of fig. 9) to detect a second amount of deflection of a second one of the image properties (e.g., chroma) from a second reference value; a third deflection calculation unit (as characterized by the function of item S27 of fig. 9) to detect a third amount of deflection of a third one of the image properties (e.g., hue) from a third reference value and a compensation unit which compensates the first, second, and third image properties of the input image using the first, second, and third amounts of

deflection so as to output the compensated image (e.g., produce a set up matrix by adding the adjustment direction of the luminance, chroma and the hue directed by the image display unit for the original matrix. See col. 10, lines 18-37). See further col. 8, line 37 to col. 16, line 40, wherein the each of first, second and third reference value corresponds to the distribution level value associated with each of the chroma, luminance and hue of the original signal, respectively.

Sato fails to specifically teach detecting a first amount, a second amount, and a third amount of deflections of the image properties.

However, it is noted that since in Sato the color image is adjusted or deflected based on the calculation of the produced matrix (see col. 16, lines 20-40), it is imperative and obvious that parameters of the image properties such as chroma, hue and luminance of the color need be detected so that a high image quality can be provided through adjustment of the image color, for the matrix setup is based entirely on parameters for the color. In addition, Sato at col. 10, lines 23-35, clearly suggests that parameters determination for each of a hue, chroma, and luminance for the color are requirements by adjustment units 2 for producing a setup matrix by adding adjustment direction of the luminance, chroma, the hue, directed by the image display unit, for the original matrix.

Thus, given the above disclosure, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to consider modifying Sato to include the detection of a first amount, a second amount, and a third amount of deflections of the image properties; so that an adjusted pixel can be produced by

calculating the original pixel and the set up matrix (see col. 10, lines 35-37), hence improving image quality.

As per **claims 23 and 25**, it is to be noted that since the original image signal in Sato is associated with color data defined by chroma, luminance and hue properties that individually detected by the system (as defined by fig. 9), it is obvious that a converter be provided to convert the image signal into a corresponding property before the appropriate color adjustment can be performed by the user. Thus, the disclosure of Sato encompasses a color space conversion unit to convert the input image into the first through third properties for use by the first through third deflection calculation units.

Re **claims 24 and 26**, Sato discloses the color space conversion unit converts the input image to be mapped into first and second properties in a color space comprising one of RGB, YIQ, YUV, Ycbcr and HLS. See col. 12, lines 35-65.

Re **claims 27-28**, Sato discloses a display unit (5, fig. 2) to display the compensated image.

Claims 33-36 contain features that are analogous to the limitations recited in claims 19-22. This being the case, the limitations recited in claims 33-36 are rejected under the same rationale as claims 19-22.

Claims 37 and 39 contain features that are analogous to the limitations recited in claims 23 and 25; they are rejected under the same rationale.

Claims 38 and 40 contain features that are analogous to the limitations recited in claims 24 and 26; they are rejected under the same rationale.

Claims 41 and 42 contain features that are analogous to the limitations recited in claims 27 and 28; they are rejected under the same rationale.

Response to Arguments

3. Regarding the Applicant's argument that in Sato, adjustment of the color image is not performed unless the user input information, it is noted that although this may be true, it does defer from the fact that Sato determines the deflection for each of a chroma, hue, and luminance. For the Applicant's claimed does not limit the use of a user inputs of the respective deflections to perform the calculations. Thus, the argument is not persuasive.

Allowable Subject Matter

4. Claims *2-9, 11-18, 29, 31, 43, 45* are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, because the prior art of record fail to teach compensating for color using a conversion unit to respectively calculate the input chroma signal, the hue signal and the luminance signal by converting a color signal of the input signal in a color space, and transmits the chroma, hue, and luminance signals to the corresponding chroma deflection function generation unit, hue deflection function generation unit and luminance deflection function unit 9as recited in claim 2), wherein the first, second and third reference values are provided based on empirical data collected after statistically processing data obtained through experiment

(as recited in claim 3). The prior art of record fail to teach compensating for color, wherein the first deflection calculation unit compares the first property to first through third ranges to determine the first amount, the first range including the first reference value and for which the first amount is zero, the second range being disposed outside of the first range and for which the first amount is non-zero; a the third range being disposed outside of the first and the second ranges and for which the first amount is zero (as recited in claims 29 and 43).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sajous Wesner whose telephone number is 571-272-7791. The examiner can normally be reached on Mondays thru Fridays between 11:00 and 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on 571-272-7794. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wesner Sajous

8/2/06